APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,420	03/30/2001	Jean Helen Brittain	GEMS8081.059	3209

27061	7590	11/03/2003

ZIOLKOWSKI PATENT SOLUTIONS GROUP, LLC (GEMS)
14135 NORTH CEDARBURG ROAD
MEQUON, WI 53097

EXAMINER
FETZNER, TIFFANY A

ART UNIT	PAPER NUMBER
2859	

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _20 August 2003_ .

2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-37_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) _18-27_ is/are allowed.

6) ☒ Claim(s) _1-17, 28-37_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED 3nd Non-Final ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings

2. The objections to the drawings from the 2003 office action are rescinded. In view of the April 15th 2003 Amendment response.

Response to Arguments

3. Applicant's arguments filed August 20th 2003 have been fully considered but they are not persuasive, concerning the **Wang** reference. Applicant argues that the examiner has applied art terminology incorrectly, and that the art applied by the examiner fails to teach the limitations claimed. Specifically, with respect to **Claim 1**, applicant argues that the **Wang** reference fails to "define" (i.e. **claim 1**) or "select" (i.e. **claim 28**) "a desired field of view that is larger than an optimal imaging volume of the MRI scanner". The examiner respectfully disagrees with applicant, that this feature is not suggested by the **Wang** reference at all .

4.   However, the examiner agrees with applicant that the term "optimal imaging volume" is not stated explicitly in the **Wang** reference, therefore all of the **35 USC 102** rejections from the April 15th 2003 office action, concerning the **Wang** reference, are rescinded, and considered moot, in view of the **35 USC 103 (a)** rejections given below, which explain how the limitation of an "optimal imaging volume" is met by the **Wang** reference, even though the actual claimed terminology is lacked. [See the **35 USC 103 (a)** rejections given below].

5.   The examiner notes that upon further review of the **Yoshitome** H6-311977 reference, the applicant's argument is persuasive that the **Yoshitome** H6-311977 reference fails to restrict excitation to a selected slab thickness because, in **Yoshitome** H6-311977 excitation may also occur across the entire imaging range as argued by applicant in the April 15th 2003, and August 20th 2003 responses. Therefore the **Yoshitome** H6-311977 reference is no longer being applied as prior art against the claims of the instant application.

6.   Telephone interviews with the applicant's representative were conducted on October 23rd 2003. October 27th 2003, and October 29th 3003, in an attempt to clarify or rectify some of the pending issues, where there seems to still be a miscommunication occurring. Some issues were resolved, but some issues remain, so as per applicant's request a further **non-final** office action is being sent out concerning the remaining issues.

Claim Rejections - 35 USC § 112

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out
and distinctly claiming the subject matter which the applicant regards as his
invention.

8.   **Claim 1** recites the limitation "another set" or MR data in line 12. There is
insufficient antecedent basis for this limitation in the claim, because applicant
does not claim a first, or initial, or even "a set" of MR data prior to requiring
"another set". The word "set" does not appear prior to line 12 of applicant's claim.

9.   **The rejection of Claims 31** and **36** under **35 U.S.C. 112** which depend

from **claim 28** and recite the limitation that the data being Fourier Transformed is

"magnetic resonance data" in line 2 of **claims 31** and **36;** is maintained bur

further clarified, given the applicant's remarks in the August 20th amendment.

There is insufficient antecedent basis for this limitation in the claim, because

claim 28 fails to recite that the medical image scanner controlled by the

computer program of **claim 28** obtains magnetic resonance data. The term "a

medical scanner" broadly comprises medical equipment other than an MR

scanner, therefore there is an insufficient antecedent basis for the magnetic

resonance data of **claims 31** and **36**, because in some variations the data

obtained from claim 28 is not MR data, so subsequently the step of Fourier

transforming MR data, lacks a proper antecedent. The examiner suggests

including the limitation that the medical scanner may also include a magnetic

resonance scanner, to establish the antecedence needed for **claims 31** and **36**,

because applicant does have original specification support for the presence of an

MR scanner.

Claim Objections

10.   The objection to **Claim 2** under 37 CFR 1.75(c), as being of improper

dependent form for failing to further limit the subject matter of a previous claim,

from the February 11th 2003 office action is reiterated, However in the telephonic

interview of October 23rd 2003, this objection was discussed and a means to

rectify this issue, be specifying that "the actual" excitation itself is restricted to the

slab thickness, was discussed. The examiner notes that if applicant chooses to

incorporate the discussed solution into claim 2, that the objection to claim 2 will

be withdrawn, because then claim 2 will further limit independent claim 1.

11.   Additionally, because **claim 2** is objected to **claim 13** is also necessarily objected to as being of improper dependent form.

12.   **Claim 13** is also objected to because of the following grammatical informality:

A)   **In amended claim 13** applicant requires "applying a slab-selective RF pulse to restrict the excitation, **[and]** the slab-selective RF pulse having linear phase, sharp transitions, and low in slice ripple to reduce image artifacts from z-dependent variations in phase and amplitude." The examiner suggests inserting the word **with** after the inserted comma and in place of applicant's deleted word "and" to make the claim read better, but applicant does appreciate the amendment made to claim 13 from the August 20th 2003 amendment.

13.   **Claim 28** is objected to because

A)   In lines 12 to 13 are grammatically awkward. The step of "reposition the predefined optimal imaging area with respect to an imaging object an incremental step; is awkward because "an imaging object an incremental step" is awkward. The examiner suggests either "an imaging object **in incremental steps;**" or "**an imaging object incremental step:**"

B)   in line 13 replace the word "reposition" with "repositioning".

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1,

148 USPQ 459 (1966), that are applied for establishing a background for

determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

16.   **Claims 1-5, 7, 12, 14, 28-30** and **33** are rejected under **35 U.S.C. 103(a)**

as being anticipated by **Wang** US patent 5,928,148 issued July 27th 1999.

17.   With respect to **Claim 1**, **Wang** teaches and suggests "A method of

imaging large volumes without resulting slab-boundary artifacts comprising: the

step of "defining a desired FOV" (i.e. in the **Wang** reference the desired field of

view is 32 centimeters, or 320 millimeters) [See col. 9 line 12]. The **Wang**

reference also suggests "an optimal imaging volume" even though this term itself

is lacked by the **Wang** reference because "an optimal imaging volume" is the

volume of a subject, undergoing imaging where a strong homogeneous and

uniform signal, of high resolution and diagnostic quality contrast is obtainable;

(i.e. the best volume that can be imaged without degradation, aliasing, ghosting,

blurring or other artifacts), and in the **Wang** reference the thickness of a

diagnostically usable slab, (i.e. 130 to 170 millimeters thick; or 13 to 17

centimeters thick) is used for acquiring all arteries of interest [See col. 9 lines 10-

12] and is a readily obvious "optimal imaging volume", that would have been

obvious to one of ordinary skill in the art, at the time that the invention was made

because a slab is a planar volume, and represents the volume over which usable

data (i.e. optimal) imaging is performed. Therefore the examiner is interpreting

the thickness of the slabs taught by **Wang** to represent and suggest an "optimal

imaging volume", with the actual optimal imaging volume amount determined by the requirements of each separate application. Additionally, because 32 centimeters is larger than 13 to 17 centimeters the **Wang** reference does readily suggest applicant's limitation of "defining a desired FOV larger than an optimal imaging volume of an MR scanner;". The examiner also notes that conventionally, in a medical MR application the *ideal* desired field-of-view (i.e. the FOV) is usually larger than the optimal imaging volume because generating a large homogeneous optimal imaging volume is difficult, and most of the objects imaged, (i.e. such as human patients) are larger than the optimal imaging volume produced by the magnet(s)/coil(s) used for scanning.

18.   **Wang** also teaches and suggests "selecting a slab thickness" (i.e. 100 to 150 millimeters from col. 5 lines 27-31) "in a first direction that is smaller than the desired FOV (i.e. the 32 centimeters or 320 millimeters of col. 9 line 12). "and within the optimal imaging volume"(i.e. 130 to 170 millimeters; from col. 9 lines 10-12); "of the MR scanner;" [See col. 5 lines 27-30, where a thickness of 100 to 150 mm is taught; col. 2 lines 40-50; col. 7 lines 8-10; and col. 8 line 65 through col. 9 line 17] The examiner also notes that Figure 4 shows a patient being scanned along the axis of the patient table (i.e. the z-axis) and that each of the smaller fields of view in the **Wang** reference is 32-40 cm., with optimal imaging slabs of 10 to 17 centimeters.

19.   **Wang** teaches "exciting and encoding spins to acquire data that is restricted to the selected slab thickness;" [See col. 5 lines 27-32] where slab select gradient pulse 222 produces transverse magnetization (i.e. excitation magnetization for the 100 to 150 millimeter slab of interest, therefore the excitation is the same as the slab thickness.

20. Additionally, **Wang** teaches "acquiring MR data that includes acquiring full encoding data in the first direction for a subset of another two directions;" [See col. 5 lines 24-53 where the acquired data is fully encoded along the y-axis; for a subset" of partial sampling along the kx direction, and a first field of view along the z-direction, therefore the **Wang** reference meets the criteria for "acquiring full encoding data in the first direction for a subset of another two directions;".] The examiner notes that the claimed limitation fails to require or suggest *how* the "subset of **said** another two directions" **are encoded.** Therefore a reference that has at least full encoding in one direction meets the requirements of this limitation, and applicant's arguments regarding the novelty of this feature in the February 11th 2003 response are not persuasive.

21. **Wang** also teaches and shows "step-wise moving one of the optimal imaging volume and an imaging object;" [See col. 2 lines 40-50; col. 2 line 62 through col. 3 line 10; col. 3 lines 23-27; col. 5 lines 3-7; col. 5 lines 57 through col. 6 line 17; and col. 6 lines 52 through col. 7 line 10; Figures 4, 5, 6, and 8] and **Wang** teaches and shows "acquiring another set of MR data between each step-wise movement until the desired FOV" (i.e. the 'desired large region of interest') "is imaged." [See col. 5 lines 55-67; col. 7 lines 1-22; Figure 6, Figure 5].

22. With respect to **Claim 2, Wang** teaches that "the step of exciting and encoding spins is further defined as restricting excitation to the slab thickness." [See col. 5 lines 27-32] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 2.**

23. With respect to **Claim 3, Wang** teaches the step of "encoding and filtering data so as to acquire data that is limited to the selected slab thickness." [See col. 5 lines 27-32; col. 4 lines 56-61; col. 4 lines 45-50; and Figure 1] The same

reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 3.**

24.   With respect to **Claim 4**, **Wang** teaches that "the first direction is in a direction of the step wise movement and is defined as in a z-direction", because conventionally in the MRI / NMR art the z-axis is along the bore of the magnet, therefore Figures 3, 4, 9a, and 9b suggest "step wise movement a z-direction" of the MR magnet bore shown in Figure 1. [See Figures 1, 3, 4, 9a, and 9b]. **Wang** also teaches that "a number of image pixels obtained within the selected slab thickness in the z-direction is at least equal to a number of kx, ky subsets" because full encoding occurs along the y-axis." [See col. 5 lines 26-53; col. 6 lines 62-65; col. 8 lines 5-10; col. 8 lines 57-58; col. 9 lines 2-16] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 4.**

25.   With respect to **Claim 5**, **Wang** teaches that the "MR data acquisition between step-wise movements includes acquiring all k-space data in a direction of motion of a patient table" (i.e. the z-direction is considered to be the direction of motion of the patient table) "for a selected subset of k-space data, in the other two directions." [See Figures 3, 4, 5, 9a, 9b, 1; col. 5 lines 24-67; col. 2 lines 40-50; col. 2 line 62 through col. 3 line 10; The examiner notes that for each Field of view **Wang** teaches full phase encoding along the y-axis, and partial encoding along x, and that the patient is translated (i.e. moved through) the entire region of interest along the direction of motion (i.e. the z-axis), therefore in the **Wang** reference subsets of data in the ky and kx directions are acquired at each FOV kz position.] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 5.**

26.   With respect to **Claim 7, Wang** lacks directly teaching that "over-sampling of MR data in the first direction" (i.e. the direction of the patient table motion, or z) "is avoided", however **Wang** shows in Figure 5 that FOV acquisition components 250, 252, and 254 occur between table translations, and in Figure 5 these fields of view do not overlap, therefore Figure 5 directly suggests that the method of **Wang** is implementable without oversampling, because in Figure 5 no oversampling occurs. Additionally, Figures 9A and 9B also show that components 214 through 219; do not overlap therefore, Figures 9A and 9B also suggest that the method of **Wang** is implementable without oversampling, even though the reference lacks an actual statement teaching this limitation directly. [See Figures 5, 9A, and 9B] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 7**.

27.   With respect to **Claim 12, Wang** teaches "selecting a distance of the step-wise movement as an integer multiple of an image resolution in the first direction", because the incremental movements of the patient table are 20-30 centimeters [see table translations of col. 9 lines 38-39; Figure 5] and 20-30 centimeters is an integer multiple of 20 to 30 times the resolution, in the first direction. The examiner notes that Wang teaches and suggests that the resolution is 1 mm by 1mm for a 2D acquisition, in col. 10 lines 5-6, and 1 mm by 1 mm by 1 mm for a 3D acquisition because A 3D acquisition is taught in col. 10 lines 38-29. The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 12**.

28.   With respect to **Claim 14, Wang** suggests "selecting the step-wise movement distances to acquire complete MR data in each direction" [See col. 5 lines 23-53 where there is full encoding along y, and partial encoding along x , which is then zero-filled to acquire a complete set of data for x, while moving the

table at each complete step along z] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 14**.

29.   With respect to **Claim 28, Wang** teaches and suggests via figure 1, that the MR scanner uses a computer program to control the MR medical image scanner and create images across scanning boundaries without boundary artifacts, the computer (i.e. see computer system 108 of figure 1) "having a set of instructions to control the computer to: "select an FOV" (i.e. in the **Wang** reference the desired field of view is 32 centimeters, or 320 millimeters) [See col. 9 line 12]. The **Wang** reference also suggests "an optimal imaging area" even though this term itself is lacked by the **Wang** reference because "an optimal imaging area" is the area of a subject, undergoing imaging where a strong homogeneous and uniform signal, of high resolution and diagnostic quality contrast is obtainable; (i.e. the best area that can be imaged without degradation, aliasing, ghosting, blurring or other artifacts), and in the **Wang** reference the thickness of a diagnostically usable slab, (i.e. 130 to 170 millimeters thick; or 13 to 17 centimeters thick) is used for acquiring all arteries of interest [See col. 9 lines 10-12] and is a readily obvious "optimal imaging area" of a volumetric slab (i.e. a three-dimensional measurement, that would have been obvious to one of ordinary skill in the art, at the time that the invention was made because a slab is a planar volume, of a specific area, and represents the volume including its intrinsic area, over which usable data (i.e. optimal) imaging is performed. Therefore the examiner is interpreting the thickness of the slabs taught by **Wang** to represent and suggest an "optimal imaging area" in three dimensions", with the actual amount of optimal imaging area, or 3D volume determined by the requirements of each separate application. Additionally, because 32 centimeters is larger than 13 to 17 centimeters the **Wang** reference does readily suggest

applicant's limitation to "select an FOV spanning an area greater than a pre-
defined optimal imaging area of the medical image scanner;". The examiner also
notes that conventionally, in a medical application the *ideal* desired field-of-view
(i.e. the FOV) is usually larger than the optimal imaging area or volume because
generating a large homogeneous optimal imaging area, (i.e. 2D) or volume, (i.e.
3D) is difficult, and most of the objects imaged, (i.e. such as human patients) are
larger than the optimal imaging area, or volume produced by the medical scanner
for scanning.

30.   **Wang** also teaches and suggests the step to "apply an RF pulse to excite
a region in at least a first direction in the selected FOV;" [See RF excitation pulse
220 which excites magnetization in a slab-select direction in the FOV; col. 5 lines
23-67] **Wang** also teaches and suggests the step to "apply magnetic field
gradients to encode the region in the first direction" [See col. 5 lines 23-67]
Because **Wang** excites a three-dimensional slab of a specified thickness" (i.e.
100 to 150 millimeters from col. 5 lines 27-31) in the first slab-select direction,
and acquires k-space data for a subset of the kx and ky directions, the **Wang**
reference suggests that the computer is programmed to "acquire 3D" (i.e. slab) k-
space data in a first direction" (i.e. the slab-select direction) "for a subset of the
second and third direction" (i.e. the kx and ky directions. [See col. 5 lines 23-53].

31.   Additionally, **Wang** teaches and suggests from figures 4, 5, 6, and 8 the
step to "reposition the predefined optimal imaging area with respect to an
imaging object *in incremental steps*." [See abstract; col. 5 lines 54-67] **Wang**
also teaches and suggests the step to "repeat data acquisition and the imaging
area incremental repositioning until complete image data are acquired across the
entire FOV to reconstruct an image of the FOV". [See col. 5 lines 55-67; col. 7
lines 1-22; Figure 6, Figure 5, figure 8, figure 4; col. 2 lines 40-50; col. 2 line 62

through col. 3 line 10; col. 3 lines 23-27; col. 5 lines 3-7; col. 6 lines 1-17; and

col. 6 lines 52-68]. The same reasons for rejection, and obviousness, that apply

to **claim 1** also apply to **claim 2.**

32.   With respect to **Claim 29**, the **Wang** suggests and shows the step of

"moving a patient table a fixed distance to acquire additional k-space data",

because each field of view acquired contains k-space data, and the figures show

more than one step-wise incrementing of the patient table to acquire a field of

view.. [See Figures 4, 5, 6, 8, and the computer components of figure 1; col. 5

lines 23-67] The same reasons for rejection, and obviousness that apply to

claims 1, 8, 18, 19, 28 also apply to **claim 29** and need not be reiterated.

33.   With respect to **Claim 30, Wang** suggests that three dimensional data is

obtainable because Wang obtains volumetric "slab" data throughout the

reference, and teaches a 3D fast acquisition of magnetic resonance data in col.

10 lines 38-39] Additionally, **Wang** suggests the step of "moving a patient table a

fixed distance for a number of acquisitions until a set of k-space data are

acquired of a given slab; moving the patient table a greater distance, than the

fixed distance; repeating the act of image data acquisition for a second slab, and

moving the patient table the fixed distance for the same number of acquisitions

as for the first slab until a set of image data are acquired", because figure 5

shows that the translation of the table is different between acquired field of views,

although the field of views are the same. The examiner is interpreting each field

of view or FOV as representing a set of k-space data, made up of individual slabs

of a fixed width." **Wang** also suggests that three dimensional data may be

reconstructed because the 3D fast acquisition data is also used to reconstruct an

image for comparison to the 2D acquisition in col. 10 of **Wang**. Additionally, the

same reasons for rejection, and obviousness that apply to **claims 1, 28** also

apply to **claim 30** and need not be reiterated.

34.   With respect to **Claim 33**, the **Wang** method teaches, and shows"moving

a patient table in incremental step distances that is a multiple of a z-resolution",

because the incremental movements of the patient table are 20-30 centimeters

[see table translations of col. 9 lines 38-39; Figure 5] and 20-30 centimeters is a

multiple of 20 to 30 times the resolution, because the resolution is 1 mm by 1mm

for a 2D acquisition and 1 mm by 1 mm by 1 mm for a 3D acquisition. A 3D

acquisition is taught in cl. 10 lines 5-6 and lines 38-29. The same reasons for

rejection, and obviousness that apply to **claims 1, 28** also apply to **claim 33** and

need not be reiterated.

Allowable Subject Matter

35.   **Claim 18** is considered to be allowable over the prior art of record,

because the prior art does not teach or suggest the limitations of "**defining a**

fixed slab with respect to the magnet to acquire MR data, **acquire full MR data**

in a direction of table motion, defined as z-direction, for a selected kx-ky

subset in the fixed slab; increment the patient table while maintaining

position of the fixed slab; and repeat the acquire and increment acts until

an MR data set is acquired across the desired FOV to reconstruct an image

of the FOV" in combination with all of the other features of **claim 18**, it is the

combination of all of the features of claim 18 taken as a whole, that makes

independent claim 18, allowable over the prior art of record.

36.   With respect to **Claims 19-27** each of these claims are considered to be

allowable by the examiner because they depend from allowable independent

claim 18.

37.   **Claims 6, 8-11, 13, 15-17, 31, 32** and **34-37** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

38.   With respect to **claim 36**, The prior art does not teach or suggest the combination that the first direction is the z-direction "and that the MR data acquired in the z-direction is represented in a number of **retained pixels**, the number of which is greater than a number of kx -ky subsets, and wherein the RF pulse is continually applied to maintain a steady-state but where MR data is not acquired during table movement, and wherein the magnetic field gradients encode a 3D trajectory that is uniform in kz."

39.   The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure.

A)   **Yoshitome** Japanese Laid-open Patent Application (kokai) No. **H6-311977** disclosed November 8th 1994; [The examiner is using the English version of this reference as provided by applicant and submitted with applicant's Information Disclosure Statement].

B)   **Yoshitome** Japanese Laid-open Patent Application (kokai) No. **H5-95927** disclosed November 1st 1994;. [The examiner is using the English version of this reference as provided by applicant and submitted with applicant's Information Disclosure Statement].

Conclusion

40.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tiffany Fetzner** whose telephone number is **(703) 305-0430**. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.
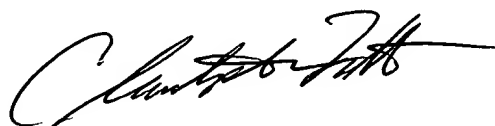
41.   If attempts to reach the examiner by telephone are unsuccessful, the
examiner's supervisor, **Diego Gutierrez**, can be reached on **(703) 308-3875**. The
fax phone number for the organization where this application or proceeding is
assigned is (703) 305-3432.

42.   Any inquiry of a general nature or relating to the status of this application
or proceeding should be directed to the receptionist whose telephone number is
(703) 305-0956.

TAF

10/30/2003

Diego Gutierrez

Supervisory Patent Examiner
Tech Center 2800

CHRISTOPHER W. FULTON
PRIMARY EXAMINER